

Impact News

Impact
PROGRAM
Good health cannot wait

This newsletter is a publication of the RHD Impact Program at Makerere University College of Health Sciences.

AUGUST 2026



Word
from the
Program Director

Professor Nelson K. Sewankambo

Permanent damage to the heart valve is a major health challenge in Uganda, affecting mainly children and young adults. It leads to rheumatic heart disease (RHD) and is a result of untreated sore throat. RHD is a serious and long-term condition and affects over half a million Ugandans. According to the RHD Research Collaborative, 'it is a major cause of cardiovascular illness and premature death in low-and-middle-income' settings.

The Impact Program at Makerere University College of Health Sciences (MakCHS), Uganda is a training program that supports a world-first rheumatic heart disease (RHD) research training program. There has been little innovation globally in RHD prevention, early detection, and management since the mid-1900's. Most of the research evidence guiding current practice was generated in high-income countries and may not translate directly to the contemporary burden of disease in low-and middle-income countries (LMICs). The Impact Mentored Research-Training Program therefore is working to existing resources and ongoing RHD clinical trials from a decade-long RHD research and training collaboration between Makerere University, the Uganda Heart Institute (UHI), Cincinnati Children's Hospital Medical Centre

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The View From the Epicenter: Why Africa Must Lead the Fight Against Rheumatic Heart Disease

For decades, the global health narrative treated RHD as a historical footnote—a disease successfully eradicated in wealthy nations by mid-century penicillin. Yet today, RHD continues to devastate over **50 million people** globally, claiming more than **300,000 lives every year**, primarily among children and young adults in sub-Saharan Africa. In Uganda, our early registries revealed a staggering 17% annual mortality rate among diagnosed patients, driven almost entirely by the fact that patients present to us far too late, already in severe heart failure.



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from P.1 (CCHMC) and Oschner Health Foundation to build capacity to tackle RHD where the burden is the highest.

The Makerere University College of Health Sciences currently marking a century of existence is a leading research and workforce development institution in Africa and is proud to host and lead this research capacity building initiative. We have recruited a total of 22 students at PhD (5), masters (12) and Career Development Awards (5). Benefits include research, tuition and travel funds, depending on the award category. This is not theoretical training, it is real professionals, dealing with real issues, affecting real patients. As you read their stories, you will learn a lot about the disease itself, about the need for increasing and improving capacity and about the tremendous job being done to get this capacity in place.

We are excited to share these experiences through this newsletter, **Impact News**¹. In this first edition, we share more information on RHD and the Impact Program, then we delve into exciting stories detailing the experiences of individual Program beneficiaries who are all carrying out critical research projects aimed at prevention of RHD and improving the quality of life for those living with the disease. So, sit back and soak in the experiences, including a few from patients.

I do thank our partners, the funder for this very important program, the fellows who have demonstrated excellent commitment to their learning and making healthcare better, as well as the program staff, the engine behind the scenes.

We do thank you for taking time to read these stories and appreciate what we are doing!

Thank you and enjoy!

Professor Nelson K. Sewankambo
Program Director

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From P.1

As an adult interventional cardiologist at the Uganda Heart Institute (UHI) and a Multiple Principal Investigator of the Impact Program, I am proud to say we are fundamentally shifting this paradigm. Supported by a five-year NIH grant running through 2027, this collaboration between Makerere University, the Uganda Heart Institute, and our North American partners is proving that the solutions to Africa's health challenges must be engineered, researched, and led by Africans.

Decentralisation of RHD Diagnostics

Waiting for symptomatic patients to arrive at our national referral center in Kampala is a losing strategy. To save lives, we had to take the technology to the people.

- **Task-Shifting Ultrasound:** Through the IMPACT Program, we have integrated task-shifted echocardiographic screening directly into primary health facilities across highly endemic regions like Northern Uganda.
- **Empowering Local Nurses:** By training non-expert healthcare workers and nurses to use basic cardiac ultrasound tools, we are identifying silent, latent RHD cases long before clinical symptoms emerge.
- **Protecting the Vulnerable:** Early detection allows us to place children on consistent secondary penicillin prophylaxis, halting the progression of the disease and giving their hearts a chance to remodel and heal.

sustainable pipeline of Ugandan clinical trialists.

Rethinking Clinical Trials Engagements

Global health infrastructure has historically treated low-and-middle-income countries merely as recruitment sites for clinical trials, rather than scientific partners. We are dismantling that model by pioneering community-centered trial frameworks tailored to our cultural realities. Some of our community trial studios in Gulu and Lira attest to this.

- **Building Community Trust:** Pediatric heart disease carries heavy social stigma in our communities. We counter this by partnering with local leaders and staging large-scale community education events.
- **Group-Based Consent:** We implemented family-friendly, group-based consent structures that respect community decision-making, resulting in exceptionally high retention and treatment adherence rates.
- **Investing in Leadership:** The core mission of Impact Program is training. Through structured Master's programs, PhD fellowships, and career development awards, we are building a

Possible Path to Eradication

The lesson that Impact Program offers to the global health community is that we cannot separate research from implementation. True equity means empowering local clinicians and scientists to generate homegrown contemporary data that informs our own national health guidelines.

By equipping our primary healthcare systems with diagnostic tools and training our own scientific leaders, Uganda is building the definitive blueprint to eradicate RHD within a single generation.

Dr. Emmy Okello

Multiple Principal Investigators, Impact Program
Senior Consultant Cardiologist at the Uganda Heart Institute
Honorary Professor of Medicine at Makerere University
Co-Director Rheumatic Heart Disease Research Collaborative in Uganda



Dr. Andrea Beaton, MPI, Cincinnati Children's Hospital Medical Center



Dr. Craig Sable, Co-Investigator, Oschner Health (in brown shirt)

Introduction to the RHD Impact Program

Reducing the Impact of Rheumatic Heart Disease across the Life Span: The Impact Program

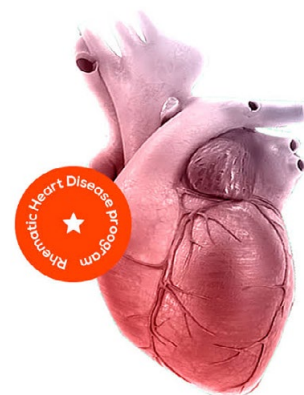
The overarching objective of the Impact Program is to equip and nurture emerging research leaders and professional scholars in Uganda to generate high-quality contemporary evidence on RHD across the lifespan and to create an enduring research training center on the African continent that will rapidly advance progress towards the elimination of the disease in a generation; a bold, but achievable goal. The program provides critical support for the training, and research activities needed to realize this vision.

Long-term degree training at Master's, PhD and Career development fellowship levels are offered, with primary coursework occurring at MakCHS. Cincinnati Children's Hospital Medical Center and Oschner Health provide both e-learning seminar and in-person immersive experience in the United States to strengthen clinical trials capacity and improve trainee's knowledge of sex considerations in health research. Recruitment targets trainees from the regional centers to build National RHD capacity. It ensures that at least 50% of the trainees are women.

Short-term trainings, seminars, webinars and

workshops are offered to degree and non-degree trainees to further strengthen institutional and national RHD-research capacity and to identify promising candidates for degree programs. A Steering Committee and the Training Advisory Committee (TAC), both offer expert advice to the Impact Directors, ensuring success of the trainees and the overall program by producing high-quality and locally relevant research. This success will translate into improving guidelines and policies for RHD care in Uganda and the region, training the next generation of excellent African researchers to address RHD prevention, early detection, and management.

Key to success of the Impact Program is sustainable institutional capacity for RHD research and training, building RHD clinical trials capacity for long term and short-term trainees, addressing the 'double sex gap' in RHD research, and strengthening the institutional culture of science to achieve the highest standards of rigor.



Understanding Life with Rheumatic Heart Disease in Uganda

**By Nelson Twinamasiko, Masters Fellow, Impact Program
- Makerere University**

Rheumatic heart disease (RHD) remains one of the leading causes of acquired heart disease among children, adolescents, and young adults in Uganda. The condition, which develops following untreated streptococcal throat infections, often results in lifelong heart complications, repeated hospital visits, and, for some patients, the need for cardiac surgery. Despite its burden, limited research has explored how RHD affects the everyday lives and well-being of young people in Uganda.

Through support from the Impact Fellowship at Makerere University College of Health Sciences,

I conducted a study at the Uganda Heart Institute to assess the health-related quality of life of adolescents and young adults aged 10–24 years living with RHD. The study aimed to better understand how the disease affects physical, emotional, social, and mental well-being beyond the clinical symptoms.

The findings showed that many adolescents reported generally good quality of life, likely reflecting the benefits of regular follow-up care and ongoing treatment support at the Uganda Heart



Institute. However, important challenges remained, particularly related to heart symptoms, treatment burden, and communication about care. Young adults reported moderate physical and mental well-being, with some experiencing limitations in daily activities and psychosocial challenges.

The study also found that adolescents who had undergone cardiac surgery generally reported better quality of life, highlighting the importance of improving access to life-saving cardiac surgical services for patients with RHD in Uganda. In addition, strong agreement between adolescents' reports and caregiver perspectives demonstrated the critical role families play in supporting young people living with chronic illness.

Beyond generating scientific evidence, the study

highlights the need for patient-centered care approaches that integrate psychosocial support and mental health services alongside routine clinical management.

The Impact Fellowship played a key role in making this research possible by providing mentorship, research training, and financial support. As a master's student, the fellowship gave me the opportunity to conduct meaningful research addressing a major public health challenge in Uganda while strengthening my skills in research and scientific writing.

By supporting research, the Impact Fellowship is helping to build the next generation of researchers and contribute evidence that can improve healthcare and patient outcomes in Uganda.

When we conduct research, do we measure what really matters to patients and their families?

By Dr. Emma Ndagire, Cardiologist Uganda Heart Institute, PhD Fellow, Impact Program

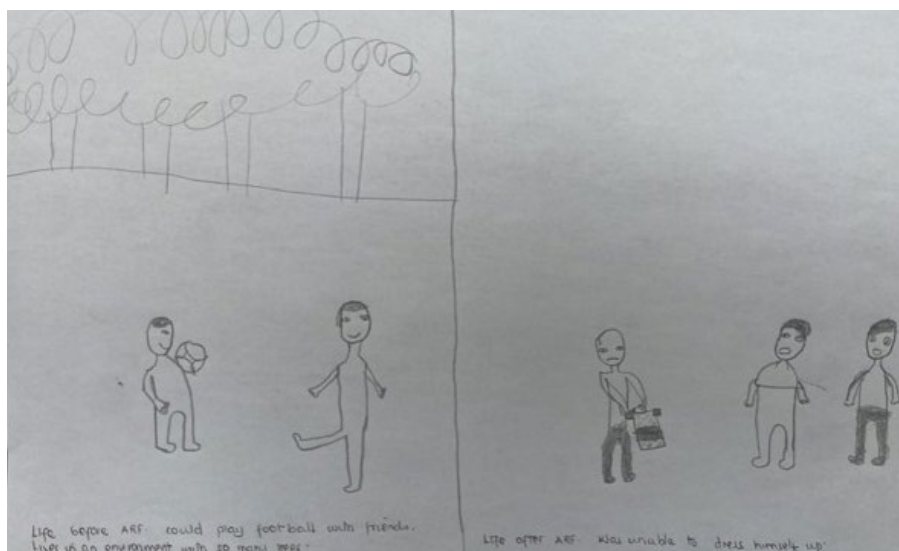
Most of the time when someone mentions the word research, our minds run to statistics, graphs and so forth. Yet behind all these data are patients, humans with deeper stories. I had an opportunity to collect data from Malawi, Pakistan and Brazil as part of my PhD research on determining the most appropriate outcomes to measure in Acute rheumatic fever (ARF) clinical trials. As a clinician, the experience I went through shaped how I currently think about patient centered care. When we conduct research, do we measure what really matters to patients and their families? This is the question I pondered about as we conducted patient and family interviews. Children were able to open up about the symptoms experienced, impact of the disease on school attendance and most significantly, its impact



Conducting an interview in Malawi. Picture taken by research nurse in Malawi. Consent was obtained from the participants.

on play. What struck me most was how these children were able to express the impact of disease using drawings and how they confidently mentioned the type of treatment they preferred. I vividly remember a 7-year-old girl who drew a tree with roots anchored in the ground when she was told to draw a picture of what her life

was before ARF and drew a tree without roots as a representation of what her life was when she had ARF. When asked to interpret what she had drawn, this is what she said “Having ARF is like a tree whose roots have died off. This tree cannot stand firm in the ground. Another child asked “Is a syrup formulation of penicillin available? I would prefer to take that instead of injections” These statements have stayed with me since. As I left these countries, I appreciated all these unheard voices that would shape the future of ARF research and hopefully improve care for other children with ARF.



Picture drawn by one of the children. The left picture depicts his life before ARF. He could play football with his friends. The picture on the right shows his life when he had ARF symptoms. He could not even dress himself up.

From Detection to Prevention: New Evidence Offers Hope for Children with Rheumatic Heart Disease

By Dr. Joselyn Rwebembera, Adult Cardiologist Uganda Heart Institute, Impact PhD Fellow, Makerere University College of Health Sciences



Five-year follow-up research from Uganda shows that early diagnosis and consistent antibiotic prophylaxis can dramatically reduce progression of mild rheumatic heart disease.

For many years, rheumatic heart disease (RHD) has been viewed as a condition identified too late — often when young patients already have severe valve damage requiring surgery that is costly and inaccessible for many families in Uganda and across sub-Saharan Africa. However, emerging research from Uganda is beginning to shift that narrative from late treatment to early prevention.

Now in the third year of my PhD at Makerere University, I am evaluating how to optimize secondary prevention of early RHD—from improving echocardiographic diagnosis to understanding adherence and the cost-effectiveness of antibiotic prophylaxis. My research builds on the landmark GOAL Trial (Gwoko Adunu pa Lutino), conducted in Gulu District in Northern Uganda, which demonstrated that regular penicillin

prophylaxis reduced progression of early RHD in children.¹

In our recently published five-year follow-up study, we evaluated outcomes among children with early RHD who continued receiving regular benzathine penicillin injections after participation in the GOAL Trial. The findings were encouraging.²

Among 349 children followed over five years, none progressed to severe RHD, while only 1.4% progressed to moderate disease. Nearly one-third of participants had complete echocardiographic normalization. Most importantly, adherence to treatment remained exceptionally high, demonstrating that long-term preventive care is achievable even within resource-limited settings.

These findings reinforce a critical message: RHD progression is largely preventable when disease is identified early, and patients remain connected to care.

The implications for Uganda's health system are significant. Early identification and preventive treatment could reduce the future burden of advanced heart failure and lessen demand for expensive cardiac surgery services. The findings also support investments in echocardiographic screening, decentralized RHD care, patient registries, and community-based follow-up systems.

Beyond the research findings, this work has deeply influenced my clinical practice and professional direction. As a cardiologist at the Uganda Heart Institute, I frequently encounter young patients presenting with advanced valvular disease that may have been preventable with earlier diagnosis and adequate prophylaxis.

The study has strengthened my commitment to advocating for early detection strategies and integrating preventive RHD care into routine clinical services. It has also highlighted the importance of building systems that support long-term adherence, particularly through decentralized care models that bring services closer to communities.

Importantly, the research contributes evidence from a high-burden African setting at a time when global policy is increasingly prioritizing RHD prevention. Recent recommendations from the World Health

Sidebar: Key Findings from the GOAL-Post Follow-Up Study

- 349 children with mild rheumatic heart disease were followed for five years.
- 0 children progressed to severe rheumatic heart disease.
- Only 1.4% progressed to moderate disease.
- 31.8% showed complete normalization on echocardiography.
- Overall treatment adherence exceeded 98%.
- The findings support early diagnosis and adequate secondary antibiotic prophylaxis.

Organization now support screening and secondary prophylaxis for children with screen-detected RHD, aligning closely with findings from Uganda.

As an Impact PhD fellow, this journey has demonstrated the power of locally driven research in addressing diseases that disproportionately affect low-resource settings. The mentorship and collaboration provided through the Impact Program have strengthened my capacity as a researcher, clinician and advocate for equitable cardiovascular care.

Ultimately, our goal is not simply to treat advanced RHD, but to prevent children from ever reaching that stage.

Challenges and Opportunities in Rheumatic Heart Disease Screening in Pregnant women in Uganda.

By Doreen Nakagaayi, Cardiologist Uganda Heart Institute, PhD Fellow, Impact Program, Makerere University

Rheumatic heart disease (RHD) remains a major cause of illness and death among women of reproductive age in many low-resource settings. Despite being preventable and treatable, many women are diagnosed only when the disease is already advanced, contributing to poor maternal and fetal outcomes. Emerging evidence suggests that delayed diagnosis during pregnancy is one of the key drivers of these disparities.

As part of my PhD research, our team set out to better understand RHD among pregnant women in Northern Uganda, a region known to have one of

the highest burdens of the disease in the country. Our objectives were: to determine the prevalence of RHD in pregnancy, identify clinical and demographic characteristics that could help predict which women are most at risk, and follow affected mothers throughout pregnancy to understand maternal and fetal outcomes.

Building on relationships established through the Accelerating the Delivery of? Rheumatic Heart Disease Preventive Interventions in Uganda (ADUNU) program, we engaged district health leaders, facility managers, community health workers, and local



communities before launching screening activities in the district. Together, we organized screening camps across ten health facilities, including Health Centre IIIs, a Health Centre IV, and Kitgum General Hospital.

The preparation was extensive. Two weeks before each camp, village health teams (VHTs) and health workers mobilized pregnant women across the catchment areas. During each five-day camp, women received health education, provided informed consent, completed structured interviews, and underwent echocardiographic screening. Any suspected cases were reviewed and confirmed by a cardiologist.

Over six months, our team screened more than 2,800 pregnant women across eight health facilities. The response from communities and health workers was overwhelmingly positive. Facility staff reported that the screening camps encouraged women to attend antenatal care earlier and increased first antenatal visit attendance. VHTs played a critical role in mobilization, while public address systems helped to reach women living in more remote villages. Access to handheld echocardiography devices and support from ADUNU program made it possible to bring specialized cardiac screening services closer to communities that would otherwise have limited access.

Over six months, our team screened more than 2,800 pregnant women across eight health facilities.

Yet the journey was not without challenges.

Conducting large-scale screening in rural settings requires substantial financial, logistical and human resources. Research staff often spent extended periods away from home, while the cardiologist had to balance field activities with demanding clinical responsibilities. Progress was occasionally slowed by competing program activities that required the same personnel.

Community perceptions also influenced participation. In some areas, awareness of RHD was limited, and misconceptions emerged. At one facility, rumors circulated that the screening machines might somehow “take away people’s hearts.” Through repeated community engagement and clear messaging through public announcements and local

leaders, these fears gradually subsided and trust was restored.

Unexpected challenges sometimes came from participants themselves. A small number of women attempted to participate despite not being pregnant, occasionally exchanging urine samples with pregnant women to obtain positive pregnancy test results. These situations prompted the team to strengthen verification procedures and supervision during sample collection.

The study also highlighted important clinical questions. Some women presented with striking mitral valve regurgitation but lacked the structural valve changes typically required for definitive diagnosis of RHD. These cases sparked valuable discussions among the clinical team and underscored the complexities of diagnosing RHD during pregnancy. To better understand these findings, we plan to perform a follow-up echocardiographic examination of these women six months after delivery.

Perhaps the greatest lesson from this experience was the resilience and adaptability of the research team. Faced with logistical hurdles, community misconceptions, and diagnostic uncertainties, nurses, screeners, clinicians, and community health workers consistently found solutions. Through ongoing mentorship, retraining and quality assurance activities, their confidence and skills grew substantially over the course of the project.

As we continue following participants and analyzing our data, one message is already clear: screening for RHD during pregnancy is feasible, even in resource-limited settings. The experience has demonstrated the value of community engagement, health system partnerships, and dedicated teams in bringing specialized care closer to women who need it most.

Looking ahead, we hope that findings from this study will contribute to the development of a practical diagnostic risk score that can help antenatal care providers identify women at highest risk of RHD and prioritize them for echocardiographic screening. Ultimately, earlier diagnosis could mean earlier intervention, healthier pregnancies, and better outcomes for mothers and their babies.

Behind every echocardiogram was a woman, a family, and a community. Their willingness to participate has brought us several steps closer to understanding and addressing the burden of RHD in pregnancy.

Beyond a Sore Throat: Uncovering Hidden Risks to Children's Heart Health

Dr. Judith Beinomugisha, Master's Fellow Impact Program, Makerere University College of Health Sciences,



When people think of a sore throat, they often see it as a minor illness that is resolved within a few days. However, for many children, an untreated Group A Streptococcal (GAS) infection can have lifelong consequences. Repeated or untreated infections may lead to acute rheumatic fever and eventually rheumatic heart disease (RHD), one of the leading causes of acquired heart disease among children and young adults in many low- and middle-income countries, including Uganda.

As a pediatric resident, I have encountered children whose lives have been profoundly affected by rheumatic heart disease. What struck me most was that many of these severe heart conditions began with what seemed like an ordinary sore throat. This realization inspired an important question: Could identifying children who silently carry Group A Streptococcus help us better understand how to prevent these devastating complications?

This question became the foundation of my master's research under the Impact Masters Research Fellowship.

The study aimed to determine the prevalence of Group A Streptococcal pharyngeal carriage among children attending boarding primary schools in Kampala and to identify factors associated with carriage. Boarding schools provide a unique environment where children live, study, eat, and play together, creating ideal conditions for the spread of respiratory infections.

Conducting the research was both rewarding and challenging. Collecting throat swabs from schoolchildren requires careful planning, collaboration with school administrators, engagement with parents, and building trust with the children themselves. Many children were initially anxious about the throat swab procedure, but through reassurance and child-friendly communication, they willingly participated. These interactions reminded me that successful research depends as much on compassion and communication as it does on scientific methods.

The findings were encouraging. Only 4.9% of the

children were found to carry Group A Streptococcus, a much lower prevalence than previously reported in Uganda. This suggests that improvements in hygiene practices and school health measures may be contributing to reduced transmission. The study also highlighted the importance of regular hand washing, with children who washed their hands more frequently being significantly less likely to carry the bacteria.

Although the prevalence was relatively low, the research also showed that children with a history of hospitalization were more likely to carry Group A Streptococcus. This finding highlights the need for continued vigilance and targeted prevention strategies, particularly among children with recent healthcare exposure.

The Impact Masters Research Fellowship played a critical role in making this research possible. Beyond financial support, the fellowship provided mentorship, training, and opportunities to strengthen my skills in study design, scientific writing, data analysis, and critical thinking. It transformed my understanding of research from an academic requirement into a powerful tool for improving child health.

One lesson I will always carry forward is that every dataset represents real children, real families, and real communities.



Behind every laboratory result is a child whose future health depends on the decisions healthcare providers, researchers, and policymakers make today.



The fellowship has also reinforced the importance of locally generated evidence. Health challenges in Uganda require solutions informed by Ugandan data. By conducting research within our own communities, we can develop interventions that are practical, relevant, and sustainable.

As I look ahead, I hope this work contributes to strengthening school health programs, promoting better hygiene practices, and informing strategies to prevent rheumatic heart disease. More importantly, I hope it encourages other young clinicians to ask questions arising from everyday patient care and to pursue research that addresses them.

The Impact Masters Research Fellowship has shown me that meaningful change begins with curiosity.

Sometimes, answering a simple question such as what a throat swab can reveal has the potential to protect countless children from lifelong heart disease.

Research is not only about discovering new knowledge, but also about creating healthier futures. I am grateful to the Impact Program for investing in young researchers who are committed to improving health outcomes through evidence-based solutions.

Beyond the Echo Report: What the Left Atrium Reveals in Rheumatic Heart Disease.

Dr. Immaculate Akullo, Teaching Assistant Lira University, Masters Fellow, Impact Program



I am currently conducting research at the Uganda Heart Institute on rheumatic heart disease, a condition I have come to understand not only through textbooks and echocardiography reports, but through the lives of the patients I interact with.

Majority of these patients are young females, in their most productive age and from disadvantaged socio-economic backgrounds from rural settings all over Uganda. Many are unable to afford advanced care like valvular repair or replacement further worsening their prognosis which correlates highly with significant morbidity and likely mortality. Sadly, some of the patients are discovered incidentally during pregnancy and in the postpartum period when they present with heart failure symptoms like breathlessness, palpitations, swelling of the legs leading to diagnosis of a valvular heart lesion, usually mitral stenosis or mitral regurgitation. By the time they reach specialist care, their disease is often already advanced. Additionally, one of the patients presented with a

stroke in the postpartum period as the first presenting complaint. However, a valvular lesion was later discovered as the cause of cardioembolic sequelae during diagnostic workup for stroke. Notably, most of these patients also had enlarged left atrial chambers.

One of the patients gave a narrative of her experience with the disease, “I used to be strong and work hard for my children, but now even walking a short distance leaves me gasping for breath. My legs swell, and I fear dying and leaving my family behind. The injections and medicines help, but the journey to Mulago is expensive and tiring. The surgery for my heart will cost about 24 million Ugandan shillings but I make about 3,000 to 5,000 shilling per day selling pancakes. It would take me a long time to gather this money and yet I feel my time is almost up.”

Direct encounters with these patients have made my research feel very real and urgent.

My research therefore focuses on a simple but powerful question: can the size of the left atrium help identify patients with rheumatic heart disease who are at higher risk of serious complications?

In rheumatic heart disease, damage to the mitral valve can cause the left atrium to enlarge over time. This enlargement may be more than just a number on an echocardiography report and may be a warning sign for atrial fibrillation, heart failure, pulmonary hypertension, stroke, or other thromboembolic events especially among those with moderate to severe disease.

As I collect clinical and echocardiographic information, I am constantly reminded that simple measurements can carry powerful meaning. In a setting where many patients face delays in accessing advanced cardiac care, an early warning non-invasive tool like

echocardiography could help clinicians prioritize follow-up, monitoring, anticoagulation where appropriate, and timely referral.

For me, this research is both scientific and personal.

It is about using evidence from our own patients to improve rheumatic heart disease care in Uganda and, hopefully, prevent avoidable disability and early death.

“

...the surgery for my heart will cost about 24 million Ugandan shillings but I make about 3,000 to 5,000 shilling per day selling pancakes. It would take me a long time to gather this money and yet I feel my time is almost up.

”



Bridging the genomic gap: My quest to map *Streptococcus pyogenes* in Uganda.

Jesse Rugogamu, Department of Immunology and Molecular Biology, MakCHS, Master's Fellow, Impact Program



As a medical doctor and scientist, I have always wanted to bridge the gap between complex molecular research and public health solutions. My journey took a massive step forward in this direction with the launch of my master's research project at Makerere University, focused on the first whole-genome characterization of *Streptococcus pyogenes* (Group A Streptococcus) isolates in Uganda.

Globally, this pathogen causes over 600 million upper respiratory infections and 500,000 deaths annually. In East Africa, untreated sore throats in children act as the direct clinical precursor to Rheumatic Heart Disease (RHD). Despite this heavy burden, our country has historically lacked baseline Whole-Genome Sequencing (WGS) data. To change this, my cross-sectional study is using Illumina next-generation sequencing to analyze 30 archived

positive isolates from school-going children in Tororo District. By mapping these circulating strains and tracking antimicrobial resistance, I aim to identify highly stable genetic regions crucial for designing future targeted pediatric vaccines.

Getting this project off the ground represents a major personal and scientific milestone for me. Recently, a series of intensive capacity-building workshops were introduced at our institution. Participating in these modules fundamentally transformed my approach to health science. I have become a significantly better scientist, gaining immense precision in experimental design and data interpretation.

Crucially, these workshops helped me master the complex administrative factors of modern research. Learning laboratory science is only half the battle; navigating grant writing, managing financial compliance, and defending a complex methodology before the Institutional Review Board (IRB) was the real catalyst. Successfully defending this protocol and handling technical feedback proved to me that we are fully equipped to drive international-standard surveillance capable of saving young hearts across Uganda.

Globally, this pathogen causes over 600 million upper respiratory infections and 500,000 deaths annually.

Strengthening Rheumatic Heart Disease Care in Kitgum Through International Normalized Ratio Machine Training

Isaac Otim Omara, Uganda Heart Institute, Masters Fellow



The Rheumatic Heart Disease (RHD) clinic at Kitgum General Hospital recently marked an important milestone in improving patient care through hands-on training on the use of a newly introduced INR testing machine. The training brought together healthcare workers and research fellows who were equipped with practical skills on patient sample collection and operation of the machine for monitoring International Normalized Ratio (INR) levels.

For many patients living with RHD, especially those on anticoagulant therapy such as warfarin, regular INR monitoring is essential to ensure safe and effective treatment. However, until recently, the Kitgum RHD clinic did not have the capacity to conduct INR testing on-site. Patients often faced delays, long travel distances, or additional costs in accessing these services from Gulu MBN Laboratory which is about 115 Km away from Kitgum.

The newly introduced machine has therefore filled a critical gap in the clinic's service delivery. During the training, we learned the correct procedures for obtaining blood samples, preparing the machine for use, conducting INR tests, and interpreting results accurately. The practical sessions also emphasized infection prevention, patient safety, and proper handling of testing materials.

This training represents a significant step toward strengthening comprehensive RHD care in Kitgum District. With the availability of point-

of-care INR testing, patients can now receive timely monitoring and management during their clinic visits, improving continuity of care and reducing the burden of referrals.

Beyond enhancing clinical services, the training also contributed to building local healthcare capacity by empowering staff with new competencies and confidence in using modern diagnostic equipment. The experience highlighted the importance of investing in both medical technology and healthcare worker training to improve patient outcomes in resource-limited settings.

As a master's Research Fellow, participating in this initiative provided valuable exposure to practical aspects of RHD management and reinforced the importance of collaborative efforts in addressing gaps in healthcare delivery. The introduction of the INR machine is expected to greatly improve the quality of care offered to patients attending the Kitgum RHD clinic and contribute to better long-term management of rheumatic heart disease in the region.



Laboratory Technologist orienting participants to the newly acquired INR machine at the RHD clinic, Kitgum General Hospital. From left to right: Mr. Lambert Ourum (laboratory technologist-Ugamer Diagnostics House Ltd) Mr. Moses Kanabi (Head of Production Unit-Ugamer Diagnostics House Ltd), Mrs. Evaline Ayaa (District RHD Focal Person-Kitgum), Mr. Isaac Otim Omara (in a white shirt-Master's research fellow), Mr. Ronald Ogwanh (RHD Research Officer). This Photo was taken from the Research Office at the Rheumatic Heart Disease Clinic in Kitgum Hospital on the 4th September 2025.

Showcasing innovative community strategies for RHD screening at the 2025 Uganda Research Dissemination Conference

Isaac Otim Omara, Uganda Heart Institute – Masters Fellow, Impact Program



In June 2025, I had the opportunity to participate in a Research Dissemination Conference held at Hotel Africana, where researchers, fellows, and healthcare professionals gathered to share findings and innovative approaches aimed at improving healthcare delivery in Uganda. The conference provided an important platform for knowledge exchange and highlighted the impact of ongoing research projects supported through various programs.

During the conference, I presented findings from our work in Kitgum District on an innovative strategy for integrating Rheumatic Heart Disease (RHD) screening into immunization outreaches conducted by public health facilities. Traditionally, these outreaches mainly attract women and children under five years of age, leaving limited opportunities to engage men in community health activities. Recognizing this gap, our team introduced the use of public address systems during outreach activities to mobilize communities and encourage greater male involvement in RHD awareness and screening.



Isaac presenting the work he, and colleagues did at Kitgum Hospital, during a conference in Kampala.

The strategy proved highly effective in increasing community engagement and broadening participation beyond the usual target groups. Through public announcements and health education messages delivered during outreaches, more men

became aware of the importance of RHD screening and were encouraged to participate in the activities. Integrating screening services into already existing immunization outreaches also demonstrated a practical and cost-effective approach for expanding access to RHD services within the community.

Presenting this work at the dissemination conference was both a valuable learning experience and an opportunity to contribute to discussions on innovative public health interventions in resource-limited settings. I was deeply honored when the abstract was recognized as the best presentation during the conference under the innovations category. In recognition of this achievement, I received a token of appreciation from the Director of Uganda Heart Institute.



Isaac (left) receives a token of appreciation from the Director of the Uganda Heart Institute, Dr. John Omagino (right) after the excellent presentation at the research dissemination conference.

This recognition was encouraging and reaffirmed the importance of community-centered strategies in addressing healthcare gaps. The experience also strengthened my commitment as a master's Research Fellow to continue contributing toward improving access to RHD screening and care, particularly in underserved communities such as Kitgum District.

From Uganda Heart Institute to Mbarara and Kabale: my contribution to strengthening upcountry cardiology services

Dr. Peter Kangwagye, Cardiologist Kabale Regional Referral Hospital, Career Development Awardee, Impact Program



I support the Rheumatic Heart Disease (RHD) Clinic at Mbarara Regional Referral Hospital once every week. I also serve two other regional referral hospitals, and this has given me a unique perspective on the growing need for specialized cardiac care in our communities.

I am privileged to be one of the beneficiaries of a research grant from the Impact Program under Makerere University. Through this support, we have been able to strengthen services at the RHD clinic in Mbarara,

which currently has nearly 200 patients registered, with about 130 active patients attending regular follow-up and care.

Over the past year, the Impact Program funding has enabled us to provide comprehensive cardiac assessments for more than 120 patients. These services include electrocardiography (ECG) and echocardiography (ECHO), commonly known as heart scans. In addition, we have conducted essential laboratory investigations such as renal function tests, full blood counts, and blood sugar monitoring.

The impact of this support has been remarkable. The clinic has become more vibrant, patient follow-up has improved, and most importantly, many of our patients are now stable and receiving consistent care. For many individuals living with rheumatic heart disease, access to these investigations would otherwise be difficult and unaffordable.



Dr. Peter Kangwagye (sitting, wearing black jumper) conducting practical training of bedside ECHO to nurses and other non-cardiology experts

My Journey from RHD Impact Masters Research Fellow to Consultant Physician

Dr. John Tebajanga, Consultant Physician Mbarara Regional Referral Hospital/Uganda Cancer Institute–Mbarara Cancer Centre, Masters Fellow, Impact Program Mbarara University of Science and Technology



I am pleased to share an important milestone in my professional journey—the successful completion of my Master of Medicine in Internal Medicine training, made possible through the support of the RHD Impact Masters Research Fellowship grant.

The fellowship grant provided me with an invaluable opportunity to pursue postgraduate training while conducting research on a health problem that affects many Ugandans living with rheumatic heart disease. Through this support, I was able to successfully undertake my master's research project entitled: "Prevalence of Kidney Dysfunction and Associated Factors among Patients with Rheumatic Heart Disease at Mbarara Regional Referral Hospital in Southwestern Uganda." My study sought to determine the burden of kidney dysfunction among patients with rheumatic heart disease and identify factors associated with its occurrence. The findings highlighted the importance of routine kidney disease screening among patients with rheumatic heart disease and generated evidence that can contribute to improved patient care and future research.

The RHD Impact Fellowship was more than a source of funding; it was a platform that nurtured my growth as a clinician, researcher, and future leader in healthcare. The mentorship, academic guidance, and research support I received throughout the fellowship enabled me to successfully complete both my research project and specialist training.

Today, I am proud to serve as a Consultant Physician at Mbarara Regional Referral Hospital and the Uganda Cancer Institute-Mbarara. This achievement marks the beginning of a new chapter in my commitment to providing high-quality patient care, mentoring future healthcare professionals, and conducting research that addresses Uganda's most pressing health challenges.

I am deeply grateful to the RHD Impact Program for believing in my potential and investing in my professional development. I also extend my sincere appreciation to my supervisors, mentors, colleagues, study participants, and family members whose encouragement and support contributed to this success.

As I look ahead, I remain committed to advancing research

and clinical care in cardiovascular and kidney diseases while contributing to the strengthening of Uganda's healthcare system. I hope that the work I have accomplished through this fellowship will inspire other young clinician-scientists to pursue research that improves the lives of our patients and communities.

The completion of my Master's training is not only a personal achievement but also a testament to the transformative impact of research fellowships in developing the next generation of physician-scientists in Uganda.



The author enjoys a Kodak moment after a hard but satisfying day of mending lives and giving hope.

From PhD research to global cardiovascular science collaborations

By **Agnes Namaganda**, Assistant Lecturer, Department of Physiology, Makerere University College of Health Sciences, PhD Fellow Impact Program



What began as a PhD research project on cardiovascular health has evolved into a journey of international learning, collaboration, and professional growth. Through my PhD funding program, I have gained opportunities that have significantly broadened my understanding of cardiovascular physiology and strengthened my development as a biomedical research scientist.

My research focuses on the cardiovascular system, an area that has exposed me to multidisciplinary teams of cardiologists and cardiovascular researchers. This exposure enabled me to secure a mobility grant to the Cardiovascular Science Unit at the Università Campus Bio-Medico di Roma, Italy. During this 3-month visit, I collaborated with clinicians and researchers and participated in data collection for a cardiometabolic risk profiling study among patients with heart failure. The experience provided valuable insights into clinical cardiovascular research and the translation of scientific findings into patient care.

Motivated by a long-term goal of establishing a cardiorenal physiology research laboratory within the Department of Physiology at Makerere University, I also had the opportunity to visit the Centre for Cardio-metabolic Research in Africa at Stellenbosch University, South Africa. The Centre is recognized as a leading research hub in Africa for cardiovascular and metabolic disease research, with state-of-the-art laboratory facilities, advanced diagnostic and biomarker platforms, strong multidisciplinary collaborations, and a proven track record in high-impact scientific

publications and postgraduate training. Benchmarking at this Centre provided valuable insights into laboratory infrastructure, research governance, biobanking, data management systems, and strategies for developing sustainable cardiorenal research programs.

The visit allowed me to benchmark laboratory infrastructure, research workflows, and training models used in a leading biomedical research environment. Importantly, I established professional collaborations that may support future training opportunities and skills development in advanced laboratory techniques.

These experiences demonstrate how research training extends beyond data collection and thesis completion. By creating opportunities for international collaboration, mentorship, and exposure to world-class research environments, the PhD funding program is helping build the next generation of cardiovascular scientists and research leaders in Africa.



Left to right: Prof. Faadiel Essop, director Centre for cardio-metabolic research in Africa Agnes Namaganda, PhD fellow, Dr. Acen Ester, PhD and Prof. Hans Strijdom (Head of division of medical Physiology) in a photo at the division of medical physiology, Stellenbosch University.



Left to Right: Agnes Namaganda, and Prof. Erna Marais during a western blotting hands-on workshop held on the 15th May 2026 at Division of Medical Physiology, Stellenbosch University.

Finding My Place in the Fight Against Rheumatic Heart Disease: A Personal Turning Point.

Maurine Lenia, Makerere University College of Health Sciences, Masters Fellow, Impact Program



I am Dr. Maurine Lenia, a resident pursuing a Master of Medicine in Internal Medicine at Makerere University College of Health Sciences. As a recipient of the 2025 Impact Research Fellowship on the Impact Program, stepping through is one of the most defining moments of my career. While a highly competitive opportunity, it demanded a clear purpose and vision as part of a global community with the same goal. Every stage of the journey sharpened my thinking and clarified the path.

The process taught me that every life-changing opportunity requires readiness, resilience, and a willingness to adapt; the incredible opportunity through the Impact Research Fellowship enables me to advance my interests in RHD and a career in cardiology. With a wealth of mentors and supervisors, and through my research on **timing and predictors of loss to follow-up of patients with**

RHD under care, this will enhance my research capacity and build professional networks to improve RHD care outcomes, which remains a significant, preventable cause of cardiovascular illness and death in many under-resourced communities.

Unlike diseases that announce themselves loudly, RHD advances in silence, waging a quiet, relentless war on the hearts of children and young adults. Identifying RHD early is only the first step; the real, lasting impact comes when patients are supported to stay on treatment. ***It is the marathon of treatment that wins the race and protects the patient's future.*** For a patient diagnosed with RHD, a monthly penicillin injection is not a suggestion. A single screening visit or a single dose of penicillin cannot protect a patient over a lifetime; what protects them is a system that keeps showing up. Poverty, distance, caregiver fatigue, and a disease that feels invisible when symptoms are absent all conspire to pull patients out of care.

That is where research, community trust, and health systems must converge, an area I hope to contribute to through the platform of this fellowship. Peer support networks, consistent follow-up, reliable access to medication, and health workers who know a patient's history well enough to notice when something has changed, are proven mechanisms waiting for committed implementation at scale. Strengthening that thread, through research that informs more resilient and patient-centered systems, is ultimately what I hope to contribute to through the fellowship.

Just when I thought it would never happen, I get onto a fellowship program

Martha Akello Okwir, RRCU-GOALIE, Master's Fellow Impact Program, Makerere University



I got to know about the Impact Program four days to application deadline, when a colleague shared the fellowship announcement in our workplace WhatsApp forum. I am pursuing a master's degree and had long hoped to secure a scholarship opportunity that would

strengthen my academic and professional aspirations. The announcement captured my interest, and I knew I had to try and put in an application.

When I discussed the opportunity with colleagues, some expressed doubt about the chances of being selected, noting that the Impact Program was highly competitive. While such comments would easily discourage an applicant, they instead motivated me to seek further

advice about the Fellowship Program. A close friend encouraged me to pursue the opportunity, reminding me that success often begins with taking the first step. With only four days remaining before the deadline, I faced the daunting task of developing a research topic, preparing a concept note, and assembling all the required materials.

The process was far from easy. My area of interest was Rheumatic Heart Disease (RHD), a condition that continues to affect vulnerable populations in low-income settings. To develop a strong and competitive research concept, I immersed myself in scientific literature, reading extensively to identify a relevant and impactful research concept. Balancing this work alongside my employment and postgraduate studies required tremendous commitment. My evenings were occupied by classes that often extended until late at night while assignments and other academic responsibilities demanded equal attention. Nevertheless, I remained determined to produce the best possible application.

After drafting my first concept note, I shared it with a friend to read and give me feedback. His positive assessment reassured me that I was moving in the right direction and encouraged me to refine the proposal further. Remember that I am a student too: after work I have classes that run up to 10pm and assignments are given but still I had to give my concept time too. These days were characterized by long working hours, minimal sleep and unwavering determination. I constantly reminded myself to remain focused and believe in my abilities.

On 10 March 2026, I submitted my application just before the deadline. Two days later, I received an email inviting me to attend an interview the

following week. The invitation came both as a surprise and a source of excitement. Seeing the email in my inbox felt almost unreal, and I immediately sought permission from my supervisor to travel for the interview.

At the time, I work in the northern region of the country, approximately 370 kilometres from the capital city where the interview would take place. After receiving approval for leave, I embarked on the overnight journey, hoping to arrive early enough to prepare adequately. Unfortunately, mechanical problems with the bus delayed our journey, and we reached the city later than expected. With the interview scheduled for 8:00 a.m., anxiety quickly set in as I realized I might arrive late. I promptly communicated my situation to the organizers and apologized in advance.

Despite the challenges, I eventually reached the venue at approximately 9:00 a.m. due to heavy morning traffic. By then, other candidates had already completed their interviews, making me the final participant of the day. Although the circumstances were stressful, the experience proved invaluable. Sitting before a panel of senior researchers and program coordinators was both intimidating and inspiring. I presented my research concept and responded to a series of questions regarding the proposed study. The panel offered constructive feedback and recommendations for improvement. Rather than ending the process there, they provided me with an opportunity to revise and strengthen the concept before a second presentation.

A few days later, I received another invitation to present the revised proposal. Once again, I travelled to the capital and delivered the improved concept. Following the presentation, I waited anxiously for the outcome. Then came the moment I had hoped for, a congratulatory email informing me that I had been selected.

Receiving the news was one of the most emotional moments of my life. Years of hard work, perseverance, and faith had culminated in an opportunity that I had long desired.

At this point, I was extremely excited about the offer, tears rolled down my cheeks because God has made it happened for me this time around

The fellowship represented far more than an academic achievement; it marked a significant turning point in my personal and professional journey.

Being selected for the Impact Program Fellowship has opened doors to advanced research training, mentorship, and leadership development. The program will expose me to international research standards, strengthen my capacity to conduct impactful scientific investigations, and connect me with a network of researchers, mentors, and experts dedicated to improving health outcomes and community well-being. Through these experiences, I will gain the skills and knowledge necessary to contribute meaningfully to the fight against Rheumatic Heart Disease.

The fellowship has already inspired me to envision a future where

evidence-based research can improve patient care, reduce disease burden, and promote equitable access to healthcare services. By enhancing my academic and professional capabilities, the Impact Program is empowering me to become a more effective researcher and change-maker.

This is the greatest opportunity that has happened to me because it's a great opportunity that will significantly improve my knowledge of Rheumatic Heart Disease (RHD). Through this research,

mentorship and collaboration, the Impact Program will equip me with the skills needed to address one of the most preventable, yet persistent Rheumatic Heart Disease affecting the low-income populations.

I believe and trust in myself that the knowledge and experience gained through this research Impact Program will enable me to create a lasting impact in improving the health, social and economic outcome of patient care.

Life after heart valve replacement: What's next?

Fahim Lugya, Internal Medicine Resident, Makerere University College of Health Sciences, Master's Fellow Impact Program



My experience with the application process to the Impact Program was seamless and easy with good help from the Program Coordinator and my Mentor Dr. Kayima, and the interview process was both thrilling and challenging... facing the esteemed panel of expert researchers and Consultant Cardiologists. Pitching my concept and future plans as well as learning from them through their comments and feedback in the interview really changed my life. I am utterly grateful for the once-in-a-lifetime chance I got to be a part of the Impact Rheumatic Heart Disease Program.

With all the support and experience of my Impact Masters Research Fellowship as well as guidance from mentors and experts, I will conduct my research and publish findings to share with the community in Uganda and the world. I aim to become a Cardiologist soon and contribute to the global fight against Rheumatic Heart Disease. This fellowship is equipping me with plenty, from resources, training and expert

support by Cardiologists and Researchers and is to surely skyrocket my career and research capability. That said, allow me to share a few experiences I have already collected along the way as I interact with patients whose lives are altered by damaged valves.

Click-click, Click-click! So loud the sound of a replaced aortic valve I heard, without a stethoscope while smiling at this young man full of life and energy. He had come for his monthly review in Cardiology Clinic. Surely, valve intervention saved his life, giving him a bright hopeful future. One question lingers though... what is next in the care of this Rheumatic Heart Disease patient.

Rheumatic Heart Disease (RHD) is the most common acquired heart disease in people under the age of 25, claiming over 360,000 young lives each year in low- and middle-income countries. Most RHD patients do not reach 40 years of age, dying at the dawn of their youthful and most productive time of their lives. Great work has been done in the prevention of Rheumatic Heart Disease particularly in LMICs like Uganda, however we have a substantial number of patients already with severe and advanced RHD. This poses a challenge amidst financial and accessibility issues within the communities.

Surgical valve interventions are saving these young lives, giving them a second chance to achieve their goals and have undeniably fruitful lives, something worth celebrating. With applause, we celebrate the RHD champions of valve replacement or repair, and care for them with every follow up visit and review. We strive to keep them healthy, happy and wholesomely well on treatment and cardiac rehabilitation.

However, a word of caution... valve intervention does not eliminate the risk of recurrent rheumatic fever and its consequences, and it

comes with a new set of potential complications. The patients you and I see with replaced valves need a little more **heart**, and a keen eye during their care and follow-up. Ensuring adherence to secondary prophylaxis and anticoagulation treatments during the times we interface with them in follow-up review is utterly crucial, to secure the difficult gains got through valve intervention, at a very costly price, nonetheless.

In this fight against RHD, as we the frontliners work to prevent and eliminate RHD in our communities, we should also provide extensive quality care and support to the RHD patients with valve intervention history, ensuring treatment adherence, regular reviews, and targeted strategies in their management, promoting their healthy livelihood, free from complications and threats.

My Impact Program Fellowship Journey So Far

Nankya Shanitah, Makerere University School of Public Health, Masters Fellow, Impact Program



I first learned about the Impact Program through my mentor, Shamim Nabidda. For a long time, we had shared an interest in conducting research to assess healthcare workers' knowledge of contraceptive use among patients with cardiovascular diseases. When the fellowship grant opportunity was announced, I saw it as a chance to turn that passion into reality.

I drafted and submitted my concept note via email and was later invited for interviews. This was an exciting moment for me, and I dedicated time to preparing thoroughly. On the interview day, I confidently presented my concept and responded to several questions to the best of my ability. Although I left the interview room uncertain about my chances, I was grateful and excited to later learn that I had been selected among the successful candidates.

Shortly afterward, I received guidance on the next steps and was assigned a supervisor, Prof. Consolata Kabonesa, who has been instrumental in shaping my research journey. With her support and mentorship, my research topic was refined from: **"Health workers'**

level of knowledge and associated factors on contraceptive use among women with rheumatic heart disease at major maternal and child health national referral hospitals in Kampala, Uganda" to: **"Determinants of healthcare workers' knowledge and practices about modern contraceptive use among women with rheumatic heart disease at the Uganda Heart Institute."**

The topic was revised to include determinants to gain a better understanding of the factors affecting health workers' knowledge and practices. In addition, the study design was changed to a mixed-methods approach, as this is considered the most suitable approach for assessing knowledge, attitudes, and practices (KAP). Lastly, the study site was changed to the Uganda Heart Institute because it is a major specialized cardiovascular center where most cardiovascular patients receive care. Therefore, it would be useful to assess health workers' knowledge, practices and their determinants regarding modern family planning within this patient population.

When I presented the revised topic, it was well received by the rest of the Impact supervisors, who acknowledged it as a stronger and more focused version of the original idea. I continued working closely with my academic supervisors and another mentor, Dr. Sam Ali, and successfully defended my research proposal.

Currently, I am finalizing the proposal for IRB approval, after which I will begin data collection. I am deeply grateful for the opportunity to be part of the Impact Program and for the way it is shaping my research career. I look forward to collecting and analyzing data, and ultimately seeing the findings contribute to policies and interventions aimed at improving healthcare workers' knowledge and practices regarding contraceptive use among women with rheumatic heart disease.

The Impact Program has been a transformative experience so far, and I am excited about the journey ahead.

My wholesome transformative journey on the Impact Program

Dr. Daniel Iraguha, Uganda Heart Institute – Career Development Awardee, Impact Program



For a submission that I took on with the notion of, “What do I stand to lose” by submitting my proposal for the advertised Impact Career Development Award fellowship programs, that I had had a go at some other grant applications with not much success. I soon arrived at the realization that I stood a chance of gaining more and indeed my journey during the training has offered more than I had anticipated or like other people would put it getting more than I bargained for!

The anticipated wait and the final acceptance of my submission came with great excitement as one would imagine for a first-time early career grant winner. Like every person that succeeded in receiving this award, I was thrilled about this new journey would hold and all the possibilities that it would present and bestow with regards to my curriculum vitae, funds management for a research project, managing a research team among many others, all of which seemed straightforward in my mind's eye. However, when the rubber met the road, it was not as simple as earlier assumed but I guess that's what makes each step of the journey exciting and exciting in retrospect. The growth curve on this journey entailed lots of learning and navigating of different processes, accompanied by the execution of the research project and the challenges that it would present as well as embracing each aspect of this process, to handle subsequent research projects that may be similar in nature or even bigger!!

Right from day one engagement of various mentors and facilitators, I did appreciate that the entire team is garnered to ensure that our tackling of problems is not unidirectional but more multi-dimensional. This approach encourages the fanning of our critical thinking muscle, particularly with respect to the various elements of the product of our research.

Additionally, the facilitators genius in explaining concepts while demystifying the intricacies of for example clinical trials, the analysis plans, as well as sharing their and I own life experiences from their journey as this significantly shortened the time to learn. This approach greatly enriched my experience on the fellowship, and I believe that once synched with the growing artificial intelligence field that is that is of interest to me as an early career researcher, will do great wonders for Cardiology and patient management in general.

Personally, this research fellowship has strengthened within me the focus of this grant on **“Reducing the impact of rheumatic heart disease across the life span.”** I feel more connected to the study participants as once they are screened for eligibility for my research titled **“Prevalence and factors associated with paroxysmal atrial fibrillation among Rheumatic heart disease patients, a stroke preventive strategy”** some of them are re-educated on their condition, and have been linked up with relevant health workers that offer some of the advanced therapies like Mechanical valve replacement and Percutaneous transvenous mitral commissurotomy with a fair number of the participants returning for their follow-up reviews overjoyed with marked improvement in their clinical and functional status. These, to me, are some of the most rewarding aspects of my clinical work to me.

The anticipated wait and the final acceptance of my submission came with great excitement as one would imagine for a first-time early career grant winner.

Given the profile of these participants that suffer this condition and its accompanying complications, the program brings out the aspect of also being an advocate for these participants. It is my hope and prayer that I will continue to contribute to and participate in research, that will enable patients to receive the ultimate valves interventions through other grants opportunities. Aluta Continua!!

My Transformative PhD Journey Through the Impact Program

Jafesi Pulle, Rheumatic Heart Disease Research Collaborative, Uganda Heart Institute – PhD Fellow, Impact Program



My journey as a PhD scholar under the Impact Program at Makerere University College of Health Sciences has been one of growth, mentorship, and opportunity. I am currently in my third year of the program, focusing on an implementation science project aimed at developing and testing a package of interventions to improve patient engagement in rheumatic heart disease (RHD) care.

Over the past two years, the program has provided me with an enabling environment to grow both academically and professionally. One of the most important aspects of my journey has been the mentorship and supervision I have received. While many PhD students often speak about challenges accessing supervisors, my experience has been remarkably different. I have been fortunate to work with supervisors and mentors who are consistently available, supportive, and genuinely invested in my progress. Their guidance has played a major role in helping me advance steadily through my PhD journey.

I am proud to say that by my third year, I have successfully completed data collection for my PhD study, which was supported through the Impact Program, and I am now focused on writing manuscripts from my work. I have already published one paper describing early clinical and implementation outcomes from an integrated RHD program in Northern Uganda (<https://doi.org/10.1161/CIRCOUTCOMES.125.012831>), an important milestone in my academic

and publication journey.

The Impact Program has also significantly shaped my career trajectory beyond my doctoral research. Through the support and encouragement of my mentors, I have had opportunities to strengthen my skills in implementation science through advanced courses and masterclasses. Notably, I was supported to travel to the University of Washington in Seattle, USA, where I attended advanced training during the Implementation Science Summer Institute in August 2025. These experiences, together with several online masterclasses, have expanded my knowledge, professional networks, and confidence as an emerging researcher. I have also been supported to present my work both locally and internationally at conferences such as the World Congress on Pediatric Cardiology and Cardiovascular Surgery, in Hong Kong, China in December 2025 and the upcoming Uganda Heart Association Conference, planned in Kampala Uganda 2026 (on hold due to Ebola outbreak); and the 2nd World Congress on RHD in Perth Australia in November 2026, among others.

Equally important has been the opportunity to engage locally within the implementation science community at Makerere University College of Health Sciences. Through the Impact Program, I have participated in local implementation science training activities that have provided valuable contextual perspectives to complement the global exposure and technical skills gained elsewhere. These interactions have created a rich learning environment where I have learned from peers and colleagues across different disciplines and research areas.

One of the most rewarding aspects of this journey has been the opportunity to not only learn, but also to share knowledge with others. As I gained implementation science skills and experience, I have been able to support and mentor colleagues within the Uganda Heart Institute and the Rheumatic Heart Disease Research Collaborative in Uganda. Guiding peers and junior researchers in applying implementation science approaches to their own work has been deeply fulfilling and, in my view, represents one of the most meaningful outcomes of the program. Across these institutions is also a vibrant community of Impact scholars studying many related aspects of RHD- all of whom have been instrumental along the journey. The opportunity to build local capacity and inspire others creates an impact that extends far beyond an individual PhD journey.

Beyond the academic milestones, the program has reinforced my

passion for improving care for people living with rheumatic heart disease in Uganda and other low-resource settings. It has equipped me with the tools to conduct impactful research while nurturing my growth as a future leader in global cardiovascular health and implementation science. My long-term goal is to become a vibrant implementation scientist dedicated to ensuring that evidence-based interventions reach the people who need them most in our communities, while applying these skills across

multiple cardiovascular diseases.

As I continue into the publication phase of my PhD, I remain deeply grateful to the Program Director, Professor Nelson K. Sewankambo, and the entire program leadership and faculty, for the support, mentorship, and opportunities provided through the Impact Program. The journey has been both challenging and rewarding, and it has strengthened my commitment to research, mentorship, and health systems strengthening in Uganda and beyond.

Perspective of a Rheumatic Heart Disease patient on Warfarin.

Dr. Stella Nabirye, Career Development Award, Impact Program



When will this end? How did I get here? Did I do something wrong to God or someone? What will become of my life? Why didn't I see this coming? These are just a few of the questions that run in the minds of our rheumatic heart disease patients on Warfarin that walk into our clinic rooms. A patient walks into a clinician's room and finds a clinician will the zeal to treat the patient as per the guidelines or as clinical practice dictates. Don't eat this..., don't eat that.....(due to Warfarin-to-food interaction), you need to swallow your Warfarin as prescribed to prevent the different complications such as thrombosis from under-coagulation or bleeding from over anticoagulation, you need monthly PT/INR monitoring, etc., etc. These are some of the recommendations

this patient receives as she or he presents themselves before the clinicians.

During the discussions about the dos and don'ts, their minds wander back to their home-settings and realize that life has just thrown a curve ball at them, with both social and economic dynamics. What will I eat? how will I survive? will I go back to school? how about my obligation as a parent? etc. Their heads swim in endless thoughts.

As I sit in these clinical rooms to attend to our patients, I witnessed many as they broke down and cried as a way of expressing the deepest pain that human hands cannot touch and sharing with me their thoughts. This was my turning point and hmm..... it brought an important aspect of managing the patient with the disease. With these findings during clinical practice. I embarked on the journey of exploring the knowledge and attitude of rheumatic heart disease patients on Vitamin K antagonist. IMPACT program has played a pivotal role on this journey. The story doesn't end here.....

..it brought an important aspect of managing the patient with the disease.

Why oral penicillin is being implemented in the treatment for RHD.

Jenifer Atala, Uganda Heart Institute, Career Development Awardee, Impact Program



Traditionally, patients with severe Rheumatic Heart Disease (RHD) have been receiving four weekly Benzathine Penicillin (BPG) as secondary antibiotic prophylaxis. Recent advisory recommendations by American Heart Association (AHA) to improve patient outcomes suggested oral penicillin as an alternative in this high-risk category. However, transition from injectable to oral therapy raises several questions regarding patients' perceptions and adherence.

My Encounter with Complications

A.G, a 48-year-old lady with RHD, had been receiving her injections of benzathine from Lira Regional Referral Hospital (LRRH) for over 3 years. On two different occasions, she got severe adverse reaction to benzathine, one of which I was personally involved in administering the injection. As is practice, our patients rest for a while within our vicinity, so we observe any unusual reaction. Just close to a minute of her sitting, I sensed something was not right based on how she looked, I acted fast and called for help and she was rescued before she fell to the ground. On resuscitation, she became conscious. She was monitored for 24 hours and was later discharged.

A second episode occurred at a health center III where I was doing support supervision, and this same patient happily walks in for her monthly injection. She was chatting while on the bed and went quiet immediately when the injection was given. The nurses thought this had happened because of the pain until they noticed she was unresponsive.

Resuscitation was done, her family informed and she was referred to the main hospital for monitoring.

Following this event, she was communicated to and finally understood why she had to take pen V instead of the injections. She seemed happier and even commented that she wouldn't go for the injections which almost made her lose her life. Her only concern was availability of these tablets at the hospital and health centers and so they must buy the tablets each time it is prescribed.

Implications for practice

While quantitative implementation outcomes such as uptake, adherence, and retention are essential for evaluating the success of policy changes, individual patient stories offer complementary insights into how these changes are experienced and why they may be accepted or resisted.

In this incident, the decision to transition the participant to oral therapy was driven primarily because of patient safety following two severe adverse events. This case highlights implementation outcomes that are influenced not only by clinical effectiveness but also by patients' safety.

The patient felt reassured by clear communication from healthcare providers regarding the reasons for the transition and the expected benefits of oral therapy. This highlights the role of patient-centered communication in facilitating acceptance of new interventions. As health systems adopt updated recommendations, ensuring that healthcare workers are equipped with knowledge to counsel patients, address concerns, and involve them in shared decision-making. Additionally, availability of medicine in lower-level facilities will likely enhance successful implementation.



Talking to patients during a clinic visit

Strengthening the Impact fellows' research capacity through the Advanced Clinical Trials Course

January 20th to 24th 2026, Associate Professor Noah Kiwanuka and Mr. Julius Kiwanuka conducted an Advanced Clinical Trials Course for the Impact Fellows, at Makerere University College of Health Sciences Conference Room. The sessions provided an excellent introduction to advanced clinical trial concepts,

including statistical analysis, principles of data management, hands-on data analysis, and reporting of study results.

According to Dr. J. Rwebembera, ***“the course was immensely helpful, particularly as many of us are now at the data analysis stage of our lead sub-studies. We truly appreciate the expertise and effort that went into making the training both practical and relevant to our research work”.***



From top right: Professor Noah Kiwanuka during the training, Mr. Julius Kiwanuka delivering a presentation and bottom; a cross section of some of the Impact Program awardees listening to the discussions during the training.



Impact Program

College of Health Sciences
Makerere University
Kampala - Uganda

Email: info@impactrhd.or.ug

Website: <https://impactrhd.or.ug/>

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